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ASSIGNMENT BOOKLET
Mathematics 8
Unit 6 Assignment

FOR STUDENT USE ONLY		FOR OFFICE USE ONLY

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Date Assignment Submitted:

_____

Time Spent on Assignment:

_____

(If label is missing or incorrect)

Student File Number:

_____

Module Number: _____

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Assigned
Teacher: _____

Assignment
Grading: _____

Graded by: _____

Date Assignment Received:

Student's Questions and Comments

Apply Module Label Here

Name

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Please verify that preprinted label is for correct course and module.

Teacher's Comments

_____
Teacher

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- Are all the assignments completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

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Mathematics 8

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Summary

	Total Possible Marks	Your Mark
Lesson 1	19	
Lesson 2	21	
Lesson 3	21	
Lesson 4	26	
Lesson 5	26	
Lesson 6	25	
Lesson 7	22	
	160	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	
General Public	
Other	

You may find the following Internet sites useful:

- Alberta Education, **http://www.education.gov.ab.ca**
- Learning Resources Centre, **http://www.lrc.education.gov.ab.ca**
- Tools4Teachers, **http://www.tools4teachers.ca**

Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

UNIT 6 ASSIGNMENT BOOKLET

The value of each assignment and each question is stated in the left margin.

(19 marks)   Unit 6: Lesson 1 Question Set

1. Brad's Burger's has the following promotion for its grand opening:

    When patrons buy a regular sandwich, they can have as many side orders as they wish at a reduced price. All side orders are priced equally, whether they are soft drinks, fries, salad, ice cream treats, shakes, onion rings, or toys.

    The following graph shows the cost for various numbers of side orders.

(1 mark)   a.   What is the cost of a regular sandwich before GST?

_____

(1 mark)   b.   What is the cost of a regular sandwich with fries and a soft drink before GST?

_____

(2 marks)   c.   Make a table of values from the graph.

(2 marks)   d.   Shelyse and four friends go to the restaurant and place an order together. They plan to share the food and divide the cost. Their order includes 1 sandwich and 6 side orders. What is each person's share of the cost before GST?

_____

_____

2.   A supermarket has a special on candy Easter eggs in their bulk foods section. The eggs are sold by weight (in grams). The following graph shows the price of various weights of the Easter eggs.

Cost of Bulk Easter Eggs

(1 mark)   a.   What is the cost of 300 g of Easter eggs before GST?

_____

(1 mark)   b.   Does the graph appear to be a linear relationship? Why?

_____

_____

(2 marks)   c.   Make a table of values from the graph.

(1 mark)　　d.　Is it possible to have points between those on the graph? Explain.

_____

_____

_____

(2 marks)　　e.　Kaitland and Jared are planning a neighbourhood Easter-egg hunt and need 900 g of Easter eggs. Find the cost, before GST, using a proportion. Show your work.

3. Scott is interested in going on a trail ride in the mountains. The cost depends on the number of days on horseback. Use the following graph to answer questions 3.a. to 3.e.

Cost of Trail Ride

(1 mark)   a. What is the cost of a half-day trail ride?

_____

(1 mark)   b. Does the graph appear to be a linear relationship? Why?

_____

_____

(2 marks)   c. Make a table of values from the graph.

(1 mark)   d.   Explain why it is not possible to have points between those on the graph.

_____

_____

_____

(1 mark)   e.   Scott would like to have a 7-day mountain trail-riding experience. If the pattern of costs shown in the graph continues, how much would his adventure cost?

_____

(21 marks)   **Unit 6: Lesson 2 Question Set**

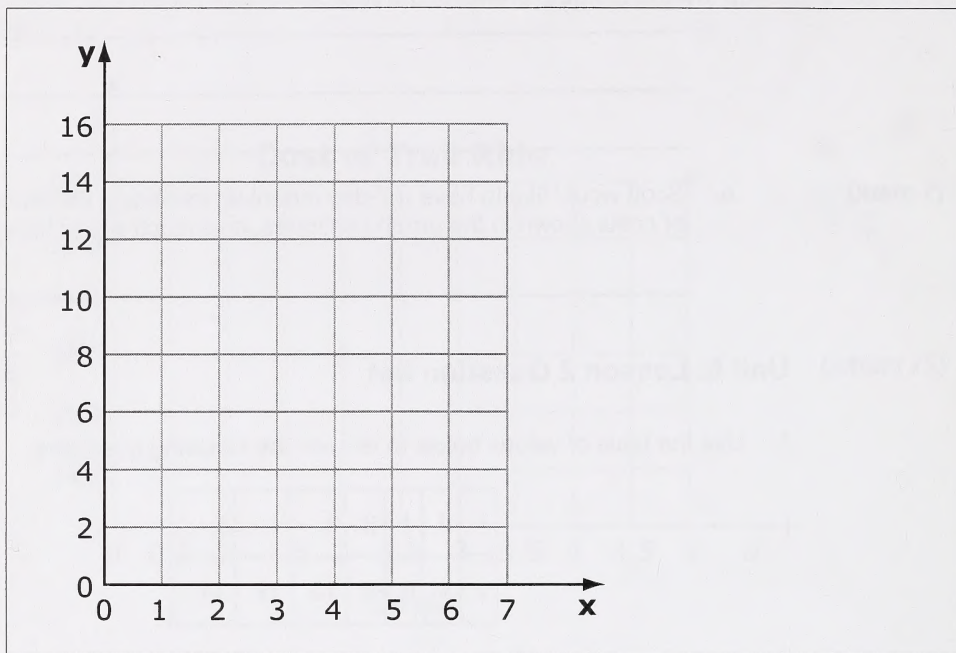   1.   Use the table of values below to answer the following questions.

x	0	1	2	3	4	5
y	4	6	8	10	12	14

(1 mark)   a.   Is the relationship shown in the table of values a linear relationship? Explain how you know.

_____

_____

_____

_____

(1 mark)   b.   Graph the ordered pairs shown in the table of values on the previous page.

(1 mark)   c.   Explain how the graph either confirms or contradicts your answer to 1.a.

_____

_____

_____

(2 marks)   d.   What is an expression for y in terms of x?

_____

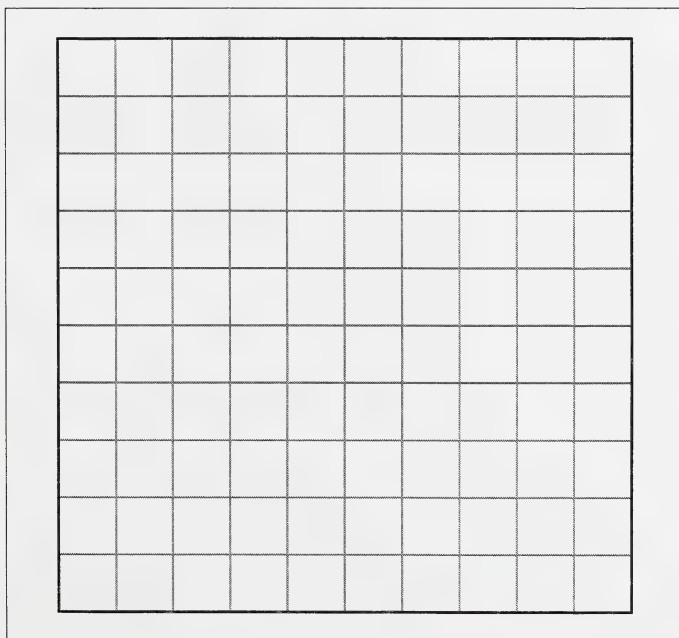2. Use the table of values below to answer the following questions.

n	0	1	2	3	4	5
m	0	2	5	9	14	20

(1 mark)   a. Is the relationship shown in the table of values a linear relationship? Explain how you know.

_____

_____

_____

_____

_____

(1 mark)   b. Graph the ordered pairs shown in the table of values above.

(1 mark)   c.   Explain how the graph either confirms or contradicts your answer to 2.a.

_____

_____

_____

(2 marks)   d.   What is an expression for m in terms of n?

_____

3.   Brandon would like to take a holiday in which he drives a jeep in the Alberta foothills and on mountain trails. On the Internet, he finds a special rental rate: By paying an initial fee of $50, he then pays only $50 per day for the jeep. There will be an additional charge depending on the distance travelled.
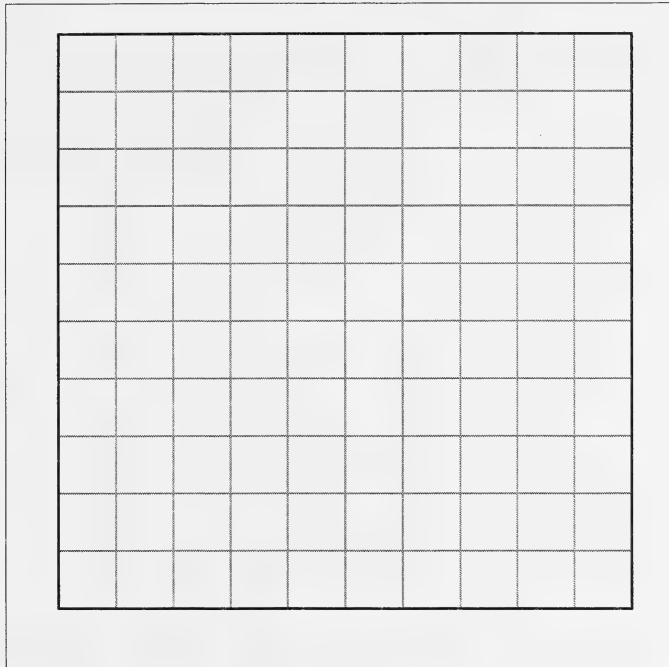
(3 marks)   a.   Make a table of values showing the rental cost for the jeep, excluding distance travelled, for renting the jeep for one to five days. Use d for the days and C for the cost.

(2 marks)   b.   Is the relationship shown in the table of values a linear relationship? Explain how you know.

_____

_____

_____

_____

(2 marks)   c.   Graph the ordered pairs you placed in the table of values on the previous page.

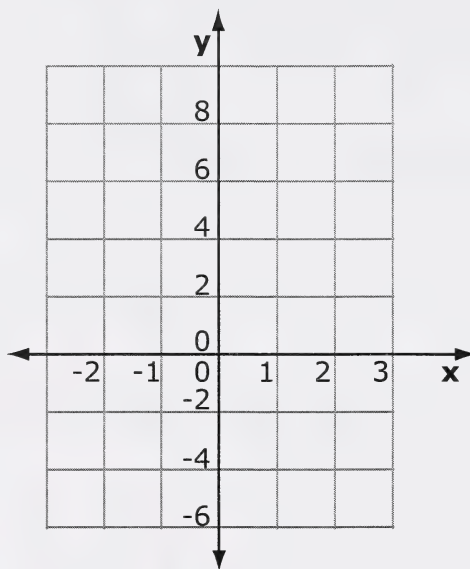**(2 marks)**   d.   Explain how the graph either confirms or contradicts your answer to question 3.b.

_____

_____

_____

(2 marks)   e.   What is an expression for C in terms of d?

_____

(21 marks) Unit 6: Lesson 3 Question Set

(4 marks)   1. a. Complete the table of values for the equation $y = 2x + 1$; then draw the graph.

x	−2	−1	0	1	2	3
y						

(1 mark)   b. What is the value of y when $x = 5$?

_____

(1 mark)   c. What is the value of x when $y = -5$?

_____

2.   A ski vacation package for two at a luxury ski resort costs $200 for the first day and $150 for each additional day thereafter.

(3 marks)   a.   Make a table of values depicting the total cost for a ski vacation from 1 to 5 days.

(2 marks)   b.   Graph the ordered pairs shown in the table of values.

(1 mark)   c.   Would it be appropriate to have values in between those shown on the graph? Explain why or why not?

_____

_____

_____

(1 mark)   d.   Is this a linear relation? Explain how you know.

_____

_____

_____

3. One type of holiday growing rapidly in popularity is the humanitarian vacation, on which you go to another country to help out. One family travelled to Peru and built stoves for orphanages in isolated communities. Each person had to pay $1500 for the cost of one stove and airfare combined. Hotels, food, and transportation cost $40 per day. The equation giving the cost in Canadian dollars for the number of days on their trip is $C = 40n + 1500$.

(3 marks)   a.   Make a table of values showing the cost for the trip for 1 to 8 days. Use n for the number of days and C for the cost.

(2 marks)   b.   Graph the ordered pairs you placed in the table of values above.
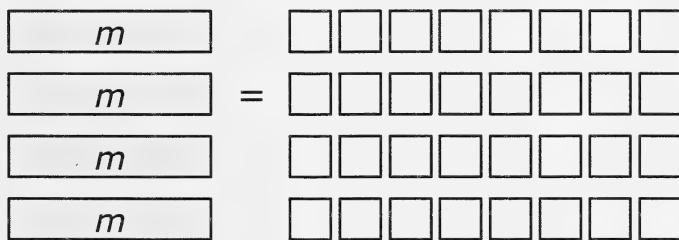
(3 marks)　　c.　The major cost of this vacation is the airfare, so staying even longer should be carefully considered. What would be the cost of a 12-day stay on this humanitarian vacation?

(26 marks)　Unit 6: Lesson 4 Question Set

(1 mark)　1.　a.　Write the equation modelled by the diagram below. Remember, the white square tiles each represent −1.

$$m \quad m \quad m \quad m = \square\square\square\square\square\square\square$$

(2 marks)　　b.　Solve the equation to find the value of *m* using the model. Explain how you used the model to find the solution.

(2 marks)　　2.　a.　Draw a diagram to represent $\dfrac{y}{4} = -3$.

(2 marks)　　　　　b.　Use the diagram to solve the equation. Show your work.

3. Solve the following equations by inspection.

(1 mark)   a. $3x = -15$

_____

(1 mark)   b. $\dfrac{y}{-4} = -6$

_____

(1 mark)   c. $-7p = 21$

_____

(1 mark)   d. $-8 = \dfrac{m}{3}$

_____

4. Solve the following equations by applying the opposite operation. Check your work.

(2 marks)   a. $4y = 144$

(2 marks)　　　　b.　$\dfrac{x}{-9} = 3$

(2 marks)　　　　c.　$-28 = 7t$

(2 marks)　　　　d.　$-16 = \dfrac{a}{-4}$

5. As a general rule, the height of a boy on his second birthday is one-half the height he will be as a man.

(1 mark)   a. Write an equation to represent the relationship described above. Use *b* for the height of the boy at age two, and *m* for the height of the man.
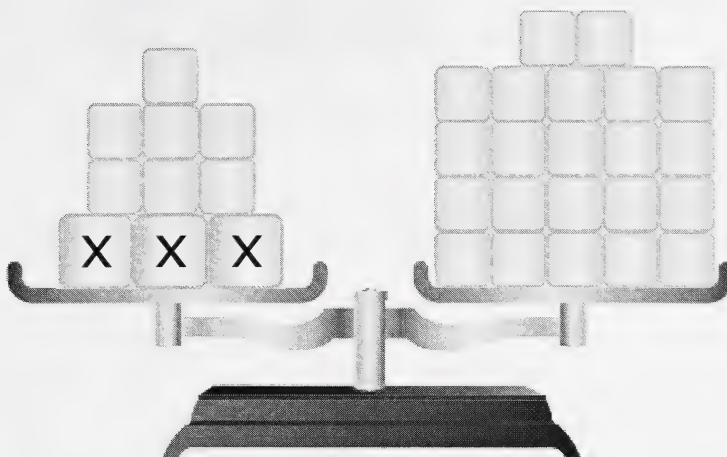
(2 marks)   b. Suppose Nathan was 94-cm tall at age two. Use the equation you developed to find his expected height as a man by applying the opposite operation. Check your work.

(2 marks)   6.   The cost per day of a 5-day sea-kayaking and whale-watching adventure, excluding the transportation cost to get there, could be found using the equation $5d = 895$. Determine the cost per day, d, using the equation and applying the opposite operation strategy. Check your work.

(2 marks)   7.   The cost per day for a whale-watching sea cruise is $542. The total cost, t, for the cruise is given by the equation $\frac{t}{7} = 542$. Apply the opposite operation strategy to find t. Check your work.

(26 marks)   **Unit 6: Lesson 5 Question Set**

1.

(1 mark)   a.   What equation is modelled by the two-pan balance?
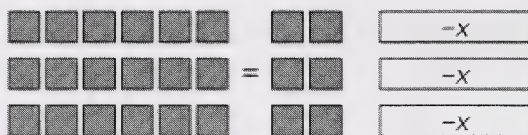
_____

(2 marks)   b.   Solve the equation modelled by the two-pan balance.

(2 marks)   c.   Check your solution.

2.

(1 mark)   a.   What equation is modelled by the algebra tiles?

_____

(2 marks)   b.   Solve the equation modelled by the algebra tiles.

(2 marks)   c.   Check your solution.

3.   Solve the following equations and check your work.

(4 marks)   a. $6p - 3 = 27$

(4 marks)   b. $25 = 8r + 1$

4.   Gentry wants to take a vacation to Los Cabos, Mexico, and stay 7 nights. The total cost of the vacation is $1684, which includes hotel and airfare. If the airfare is $592, what is the nightly cost for the hotel? Let C be the total cost of the vacation and n be the nightly cost of the hotel.

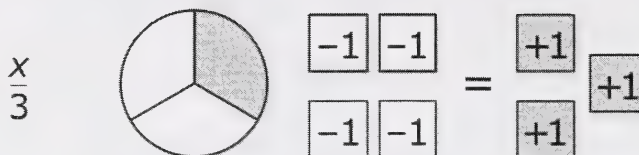**(2 marks)**   a.   What equation models the situation?

_____

(3 marks)   b.   Determine the nightly cost of the hotel.

(3 marks)   c.   Check your solution.

(25 marks)   **Unit 6: Lesson 6 Question Set**

1.

$$\frac{x}{3}$$

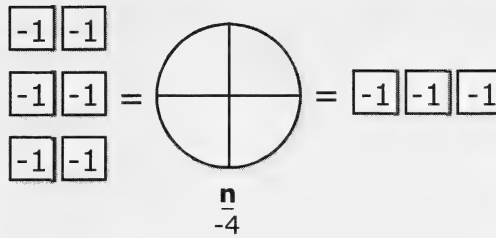**(1 mark)**   a.   What is the equation that is modelled by the diagram?

_____

(2 marks)   b.   Solve the equation modelled by the diagram.

(2 marks)   c.   Show how you would check that your answer is correct.

2.

$$\begin{array}{|c|c|} \hline -1 & -1 \\ \hline -1 & -1 \\ \hline -1 & -1 \\ \hline \end{array} = \bigoplus = \boxed{-1}\,\boxed{-1}\,\boxed{-1}$$

$$\frac{n}{-4}$$

(1 mark)   a.   What is the equation that is modelled by the diagram?

_____

(2 marks)   b.   Solve the equation modelled by the diagram.

(2 marks)   c.   Show how you would check that your answer is correct.

3.   Solve the following equations and show how you would check that your work is correct.

(4 marks)   a. $\dfrac{-p}{5} - 13 = -16$

(4 marks)   b. $2 = \frac{r}{7} + 8$

4. In the Get Focused, you read about Andrew and his friends planning a snowboarding vacation to Whistler. They have taken advantage of special rates and think their total cost excluding food will be $803. An equation describing these limited expenses is $803 = \frac{r}{4} + 630$, where r represents the total rental cost for the condo and four is the number of people who plan to stay there.

(1 mark)   a.   Solve the equation to find the rental cost for the condo.

(2 marks)   b.   Show how you would check that your answer is correct.
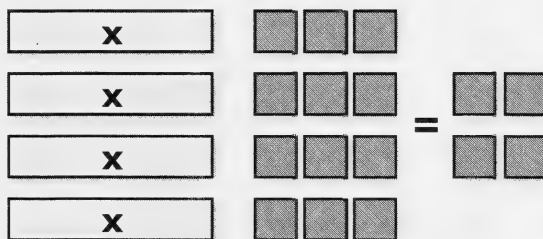
(2 marks)　　　　c.　Put your solution into the equation to see what the cost would be if six people stayed in the condo instead of four and shared the cost. Use C for the new total cost instead of 803.

(2 marks)　　　　d.　Compared to the original plan of four people, how much would Andrew save if he could get five people besides himself to go?

_____

_____

(22 marks)　**Unit 6: Lesson 7 Question Set**

1.　Use the following diagram to answer the questions.

(1 mark)　　　　a.　What is the equation in the form $a(x + b) = c$ that is modelled by the diagram of algebra tiles? Remember that each coloured square is a positive 1-tile.
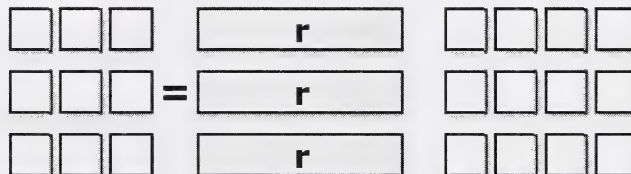
_____

(2 marks)   b.   Solve the equation modelled by the diagram.

(2 marks)   c.   Show how you would check that your answer is correct.

2.   Use the following diagram to answer the questions.

(1 mark)   a.   What is the equation in the form $a(x + b) = c$ that is modelled by the diagram of
                            algebra tiles? Remember that each coloured square is a positive 1-tile.

_____

(2 marks)   b.   Solve the equation modelled by the diagram.

(2 marks)   c.   Show how you would check that your answer is correct.

3.   Solve the following equations, and show how you would check that your answer is correct.

(4 marks)   a. $5(p + 2) = 25$

(4 marks)   b. $6 = -2(n + 1)$

4. In the Get Focused, Rebecca and Navi were planning a scuba-diving vacation in the Caribbean. They have budgeted $1400 for the hotel and the scuba diving. If they stay six days, an equation describing their expenses for the hotel and scuba diving is $6(n +70) = 1440$, where n represents the hotel cost for one night.

(2 marks)   a.   Solve the equation to find the hotel cost per night.

(2 marks)   b.   Show how you would check that your answer is correct.